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CARDIAC FUNCTION AND HEART FAILURE

HIGH SENSITIVE TROPONIN T CORRELATES WITH DIASTOLIC FUNCTION

ACC Poster Contributions

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Authors: Takuro Kubozono, Masaaki Miyata, Atsushi Kusumoto, Yoshiyuki Ikeda, Takuro Shinsato, So Kuwahata, Shoji Fujita, Kunitsugu Takasaki, Toshinori Yuasa, Hamasaki Shuichi, Chuwa Tei, Graduate School of Medicine, Kagoshima University, Kagoshima, Japan

Background: Circulating cardiac troponin T is a marker of cardiomyocyte injury, and predicts adverse outcomes in patients with chronic heart failure. High sensitive troponin T (hs-TnT) retains a prognostic value at previously undetectable concentrations. However, the significance of hs-TnT in diastolic function remains uncertain. The purpose of this study is to evaluate the correlation between hs-TnT, B-type natriuretic peptide (BNP) or N-terminal pro-BNP (NT-proBNP) and echoardiographic diastolic function in patients with cardiac diseases.

Methods: One hundred and sixty-one patients (95 males, mean age: 63±17 years) who were suspected heart failure and examined by echocardiography were enrolled. Diastolic function was evaluated by echocardiography using mean E', which is the average of lateral and septal E'. Serum level of hs-TnT and NT-proBNP, and plasma level of BNP were measured simultaneously.

Results: The linear regression analysis demonstrated that mean E' correlated with log hs-TnT ($R=0.473$, $p<0.0001$), log NT-proBNP ($R=0.481$, $p<0.0001$), and BNP ($R=0.432$, $p<0.0001$). We performed the receiver operating characteristics (ROC) curve analysis to predict the diastolic dysfunction, mean E'<10 cm/sec, by biomarkers. The area under the ROC curve (AUC) for hs-TnT was 0.82, with the highest discriminating sensitivity and specificity being 0.65 and 0.86, respectively at hs-TnT=0.01 ng/ml. The AUC for NT-proBNP was 0.76, with the highest discriminating sensitivity and specificity being 0.80 and 0.64, respectively at NT-proBNP=89.6 pg/dl. The AUC for BNP was 0.76, with the highest discriminating sensitivity and specificity being 0.43 and 0.91, respectively at BNP=108 pg/dl.

Conclusions: This is the first report to demonstrate that hs-TnT correlates with diastolic function, as same as NT-proBNP and BNP. The hs-TnT is suggested to be a useful tool to detect cardiac dysfunction.